EPA Region 8

Internet Resources for Pollution Prevention (P2) in Agriculture

What is Pollution Prevention?

Pollution Prevention, or P2, means "source reduction," as defined under the Pollution Prevention Act, and includes practices that reduce or eliminate the creation of pollutants through:

- increased efficiency in the use of raw materials, energy, water, or other resources, or
- protection of natural resources by conservation

P2 aims to prevent or reduce pollution at the source – so pollution isn't created in the first place and never enters the environment.

What does Pollution Prevention mean in agriculture?

In the agricultural sector, P2 approaches include:

- Reducing the use of water and chemical inputs
- Adoption of less environmentally harmful pesticides or cultivation of crop strains with natural resistance to pests
- Protection of sensitive areas; and
- Improved livestock waste management and beneficial use of nutrients

Why is Pollution Prevention important in agriculture?

American agriculture is noted worldwide for its high productivity, quality, and efficiency in delivering goods to the consumer. However, when improperly managed, agricultural practices have the potential to pollute and degrade the environment. Adopting pollution prevention measures may significantly reduce the impact of agricultural activities on the environment and could result in cost savings to producers.

What are some of the main Pollution Prevention approaches in agriculture?

There are many opportunities to employ pollution prevention practices in agriculture, including reducing non-point source pollution through proper nutrient management, soil conservation, and integrated pest management. Conserving water and using energy wisely also help to prevent pollution.

Non-point Source Pollution

Non-point source (NPS) pollution from agriculture is the leading source of impairments to surveyed rivers and lakes. Agricultural activities that might cause NPS pollution include confined animal activities, grazing, plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. The resulting pollutants from these activities include sediment, nutrients, pathogens, pesticides, and salts.

EPA: National Management Measures to Control Non-point Pollution from Agriculture
http://www.epa.gov/owow/nps/agmm/

a. Nutrient management

Properly managing nutrients, such as chemical fertilizers and manure, not only prevents pollution but may also save producers money.

- *CORE 4: Nutrient Management*
  http://www.ctic.purdue.edu/Core4/nutrient/nutrmgmt.html
- *Natural Resources Conservation Service: Comprehensive Nutrient Management Plan*
  http://www.nrcs.usda.gov/programs/afo/cnmp_guide_600.75.html

b. Soil conservation

Conserving soils is critical in maintaining healthy, productive land, preventing non-point source water pollution by sediments, and reducing air pollution from wind erosion.

- *EPA's Software for Environmental Awareness: Best Management Practices for Soil Erosion*
  http://www.epa.gov/grtlakes/seahome/erosion.html
- *CORE 4: Conservation Tillage*
  http://www.ctic.purdue.edu/Core4/CT/CT.html

c. Integrated pest management

By employing commonsense, effective pest control methods through the use of integrated pest management (IPM), the amount of chemical pesticides dispensed into the environment can be reduced.

- *Sustainable Agriculture Research and Education: A Whole-Farm Approach to Managing Pests (Case Studies)*
  http://www.sare.org/publications/farmpest.htm
- *High Plains IPM*
  http://www.highplainsipm.org/

Water Conservation

The agricultural industry is one of the largest users of water resources in the country. Water conservation strategies such as irrigation scheduling and efficient delivery mechanisms not only help to conserve this precious resource but also help reduce pollution from unnecessary runoff.

- *Cleaner Water Through Conservation (Case Studies)*
  http://www.epa.gov/water/you/intro.html
- *Colorado State University: Best Management Practices for Irrigation Management*
  http://www.ext.colostate.edu/pubs/crops/xcm173.pdf

Energy Efficiency

Energy expenses represent a significant portion of a farm budget, often accounting for up to ten percent of total expenses (USDA, 2004). Increased energy efficiency will not only conserve energy resources and prevent pollution but will also increase farm profit margins.

- *American Council for an Energy-Efficient Economy: Energy Efficiency in Agriculture*
  http://www.aceee.org/industry/agriculture.htm
- *National Sustainable Agriculture Information Service: Energy & Agriculture*
  http://attra.ncat.org/energy.html

Where can I find more general information about Pollution Prevention in agriculture?

- ***EPA's Ag Center:*** *provides a listing of agriculture P2 publications*
  http://www.epa.gov/agriculture/apol.html
- ***Peaks to Prairies:*** *provides a database of agricultural pollution prevention projects in Region 8*
  http://peakstoprairies.org/p2bande/agprojects/index_me.cfm

What kind of technical and financial assistance is available?

There are several funding sources available to assist with the implementation of P2 approaches in agriculture. Following are a few of the possibilities:

- ***USDA Farm Service Agency:*** *Provides payments for planting permanent vegetation on idle, highly erodible farmland (Conservation Reserve Program), and provides payments for installing specific conservation practices (Conservation Reserve Enhancement Program)*
  http://www.fsa.usda.gov/dafp/cepd/default.htm
- ***USDA Soil and Water Conservation Assistance:*** *Provides cost share and incentive payments to farmers and ranchers to voluntarily address threats to soil, water, and related natural resources, including grazing land, wetlands, and wildlife habitat.*
  http://www.nrcs.usda.gov/programs/swca/
- ***USDA Rural Development, Farm Bill Section 9006:*** *Provides grants for agricultural producers and rural, small businesses to purchase renewable energy systems and make energy efficiency improvements.*
  http://www.rurdev.usda.gov/rbs/farmbill/

Who can I contact for more information?

U.S. EPA, Region 8
8P-P3T, Pollution Prevention
999 18th Street, Suite 300
Denver, CO 80202
1 800 227-8917
http://www.epa.gov/region8/

Tribal Pollution Prevention
http://www.tribalp2.org/index.php

Colorado Department of Agriculture
700 Kipling Street, Suite 4000
Lakewood, CO 80215
(303) 239-4140
http://www.ag.state.co.us/

South Dakota Department of Agriculture
523 East Capitol Avenue
Pierre, SD 57501-5254
1 800 228-5254 *or* (605) 773-5436
http://www.state.sd.us/doa

Montana Department of Agriculture
P.O. Box 200201
Helena, MT 59620-0201
(406) 444-3144
http://agr.state.mt.us/

Utah Department of Agriculture and Food
P.O. Box 146500
Salt Lake City, UT 84114-6500
(801) 538-7100
http://ag.utah.gov

North Dakota Department of Agriculture
600 E. Boulevard Avenue, Dept. 602
Bismark, ND 58505-0020
1 800 242-7535 *or* (701) 328-2231
http://www.agdepartment.com/

Wyoming Department of Agriculture
2219 Carey Avenue
Cheyenne, WY 82002
(307) 777-7321
http://wyagric.state.wy.us/index.htm